

**ABSTRACT OF THE DISCLOSURE**

The present invention describes a method for generating a chromatographic DNA sequencing ladder useful for phasing a chromatographic separation of fragments derived from the DNA sequence, e.g., a DNA footprinting reaction. The chromatographic  
5 separation is preferably accomplished using ion pairing reverse phase high performance liquid chromatography under conditions that are substantially free of multivalent cations that are free to interfere with polynucleotide separations.